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Firecode

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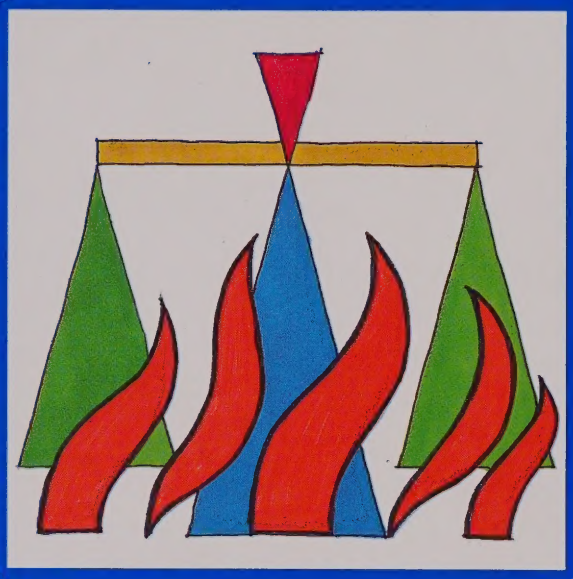
Health Technical Memorandum 86

Fire risk assessment in hospitals



UK Health Departments

NHS Estates

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Health Technical Memorandum 86

Fire risk assessment in hospitals

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An Executive Agency of the Department of Health

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About this publication

This document provides a fire engineering approach to risk assessment based on the balancing of life risk, fire hazards and existing fire precautions. Using such an approach it is possible to determine what, if any, additional fire safety precautions are necessary on the basis of fire safety equivalency.

The interaction between physical fire precautions, the dependency of the patient, the treatment facility provided, the fire hazards within the hospital, the management policies and the availability of sufficient adequately-trained staff will determine the overall level of fire safety within hospitals.

The "sister" publication to Health Technical Memorandum (HTM) 86 is Firecode: HTM 85 – 'Fire precautions in existing hospitals'. It provides a basic standard of fire safety for existing hospitals against which the fire risk assessment in this document can be made.

HTM 85 and HTM 86 have been prepared by a working group chaired by the Department of Health and in consultation with:

- Home Office;
- Department of the Environment;
- Chief and Assistant Chief Fire Officers Association;
- Fire Research Station;
- National Association of Hospital Fire Officers;
- representatives from the NHS.

The primary remit of health authorities with regard to fire safety is the safety of patients, all visitors, and health service staff. For all premises under their control, health authorities will need to select and effectively implement a combination of measures to achieve an acceptable level of fire safety, taking into account:

- the guidance in this Health Technical Memorandum;

- the relevant guidance contained in other parts of Firecode;
- all relevant legislation and statutes;
- the advice and approval of local building control and fire authorities;
- the advice of health authority staff (estates staff, hospital fire safety advisers, building control advisers etc).

The Home Office has distributed this Health Technical Memorandum to all chief fire officers and has recommended that it be used in conjunction with other parts of Firecode, when advice is sought from fire authorities.

In this document and the associated Firecode documents, references to general managers means general managers of health authorities and references to chief executives means chief executives of NHS trusts. References to health authorities include NHS trusts in appropriate circumstances.

1.0 Introduction and scope

General application

1.1 This technical memorandum provides guidance on fire risk assessments in NHS hospitals. It supersedes the guidance contained in Firecode: HTM 86 – 'Assessing fire risk in existing hospital wards' (first edition 1987).

1.2 Fire risk assessments using the guidance in this document are required in the following circumstances:

a. where the level of life risk or fire hazard is higher than that stated in Firecode: HTM 85 – 'Fire precautions in existing hospitals';

b. where it is not possible to provide the minimum level of fire precautions required in HTM 85.

1.3 The guidance in this document comes into operation on 1 May 1994.

1.4 The major part of this document (Section 5.0 and the associated worksheets) consider fire safety in areas of the hospital to which patients have access. Section 6.0 considers fire safety in other areas of the hospital.

Scope of HTM 86

1.5 This document considers the full range of issues which affect fire safety in existing hospitals. In addition to the physical fire precautions which may be provided it also considers:

a. the dependency of the patient;

b. fire hazards within the hospital;

c. management policies;

d. the availability of sufficient adequately-trained staff.

1.6 This document provides a fire engineering approach to risk assessment based on the balancing of life risk, fire hazards and existing fire precautions. Using such an approach it is possible to determine what additional fire safety precautions, if any, are necessary on the basis of fire safety equivalency.

HTM 85 – 'Fire precautions in existing hospitals'

1.7 Firecode: HTM 85 – 'Fire precautions in existing hospitals', provides guidance on fire precautions in existing NHS hospitals. It should be used for:

a. the upgrading of fire precautions; and

b. **minor** alterations;

in existing non-Nucleus NHS hospitals, **designed before** the publication of Firecode: HTM 81 – 'Fire Precautions in new hospitals', published in 1987 or the draft HTM – 'Fire safety in health buildings' ("the red fire-engine document"), published in 1978.

Use by competent staff

1.8 This document may be used by competent staff employed as:

a. estates and fire safety staff by a NHS trust or health authority;

b. building consultants;

c. building control officers;

d. fire safety consultants;

e. fire officers by the local fire authority.

Staff will be considered competent where they have sufficient technical training and actual experience or technical and other qualities, both to understand fully the dangers involved and to undertake properly the measures referred to in this document.

Non-NHS hospitals

1.9 This document may also be used as good practice guidance for fire risk assessment in existing non-NHS hospitals and nursing homes, registered under Part II of the Registered Homes Act 1984.

The Registered Homes (Northern Ireland) Order 1992

Firecode: HTM 81

1.10 Firecode:HTM 81 – 'Fire precautions in new hospitals' sets down general principles and recommendations in the design and construction of new hospitals, to ensure effective means of escape for the occupants in the event of fire.

1.11 This document may be used for fire risk assessments in hospitals designed to the guidance in HTM 81 or the earlier draft HTM. However, any work affecting fire safety in these hospitals should follow the guidance in HTM 81. **At no time should HTM 86 be used to relax the standards in HTM 81.**

The Department of Health Nucleus hospital

1.12 The Nucleus hospital is an assembly of standard cruciform templates each of which may be arranged horizontally and vertically to form a low-rise hospital with landscaped courtyards providing good natural light and ventilation.

1.13 The required standards of fire safety for this unique system of building, engineering and operational policies have been approved by Home Office.

1.14 Nucleus schemes are classified as conforming to the nucleus concept by submission to the Department of Health in accordance with the approval procedure set down in the 'Nucleus fire precautions recommendations'.

1.15 This document may be used for fire risk assessments in Nucleus hospitals. However any work affecting fire safety in these hospitals should follow the guidance in 'Nucleus fire precautions recommendations'. **At no time should HTM 86 be used to relax the Nucleus standards.**

Other Firecode documents

1.16 This document should be read in conjunction with the recommendations contained in the latest revisions of the following Firecode documents:

Policy and principles;

HTM 82 Alarm and detection systems;

HTM 83 General fire precautions;

HTM 87 Textiles and furniture;

FPN 1 Laundries;

FPN 2 Storage of flammable liquids;

FPN 3 Escape bed lifts;

FPN 4 Hospital main kitchens;

FPN 5 Commercial enterprises on hospital premises;

FPN 6 Arson prevention and control in NHS healthcare premises;

Directory of fire documents (to be revised)

and other relevant documents as they are added to Firecode.

Improvement programmes

1.17 This document provides a comprehensive fire risk assessment which can determine what, if any, additional fire precautions are required; however, it does not provide a method of prioritising the work required.

1.18 The programme of work for the improvement of fire precautions should be properly accounted for in annual business plans.

Alternative methods of fire risk assessment

1.19 This document describes one form of fire risk assessment, but it is recognised that other forms are possible. There is no obligation to follow the form of fire risk assessment set out in this document. However, if an alternative form of fire risk assessment is used the responsibility is then placed upon the user of the alternative form to show that it achieves the same fire engineering objectives as this document. Any alternative form of fire risk assessment must take into account the standards set out in Firecode: HTM 85 – 'Fire precautions in existing hospitals'.

2.0 Glossary of terms

2.1 For the purposes of this document the following terms are defined:

circulation space
The communication routes both within the department/management unit and giving access to other parts of the hospital, and to all necessary fire escape exits.

compartment
A building or part of a building, comprising one or more rooms, spaces or storeys, constructed to prevent the spread of fire to or from another part of the same building, or an adjoining building.

compartment floor
A fire-resisting floor used to separate one fire compartment from another and having a minimum period of resistance of 60 minutes.

compartment wall
A fire-resisting wall used to separate one fire compartment from another and having a minimum period of resistance of 60 minutes (or 30 minutes in single-storey hospitals).

final exit
The termination of an escape route from a building giving direct access to a place of safety outside the building.

fire door
A door or shutter provided for the passage of persons, air or objects which, together with its frame and furniture **as installed** in a building, is intended when closed, to resist the passage of fire and/or gaseous products of combustion and is capable of meeting specified performance criteria to those ends.

fire hazard
A set of conditions in the operation of a product or system with the potential for initiating a fire.

fire hazard room
Room or area as defined in Firecode: HTM 81 – 'Fire precautions in new hospitals'.

fire precautions
Measures which can be taken to reduce the likelihood of ignition occurring and/or to mitigate the consequences should ignition occur. Precautions are considered under five headings, each of which is defined below:

- **prevention**
  precautions to control potential ignition and fuel sources, to ensure that fires do not start; prevention also includes general fire precautions;
- **communications**
  precautions which inform the occupants and fire brigade when a fire starts;
- **means of escape**
  precautions which enable the occupants of the building to turn their back on the fire, and escape to a place of safety away from the effects of the fire;

- **containment**
  precautions which contain the fire to the smallest possible area, and control the threat to life safety and the extent of property damage;
- **extinguishment**
  precautions which ensure that the fire can be extinguished quickly and with minimum disturbance to the function of the hospital and damage to its premises.

fire resistance
Ability of an element of building construction, component or structure to fulfil, for a stated period of time, the required load-bearing capacity, fire integrity and/or thermal insulation and/or other expected duty in a standard fire-resistance test.

fire stop
A seal provided to close an imperfection of fit or design tolerance between elements or components, to restrict the passage of fire and smoke.

ignition sources
Heat sources or flames which will cause ignition.

place of safety
A place where persons are in no danger from fire.

progressive horizontal evacuation
Evacuation of patients away from a fire into a fire-free compartment or sub-compartment on the same level.

protected shaft
A shaft which enables persons, air or objects to pass from one compartment to another, and which is enclosed with fire-resisting construction.

refuge
A place of temporary safety within a building, this should be an adjoining compartment or sub-compartment capable of holding all those threatened, without a significant change in level and from which there is potential for further escape should that become necessary.

sub-compartment
Areas into which the building can be divided to reduce travel distance and which provide 30 minutes resistance to fire.

sub-compartment wall
A fire-resisting wall used to separate one sub-compartment from another and having a minimum period of resistance of 30 minutes.

travel distance
The horizontal distance to be travelled by a person from any point within the floor area to the nearest adjoining compartment, sub-compartment, escape stairway or external exit, having regard to the layout of walls, partitions, fittings and furniture.

unprotected areas
Unprotected area in relation to a side or external wall of a building means:

a. a window, door or other opening; and

b. any part of the external wall which has a period of fire resistance **less** than 60 minutes, or 30 minutes for a single-storey hospital (integrity and load-bearing capacity only), and which provides less than 15 minutes fire resistance (insulation).

3.0 Statutory requirements

Building Regulations 1991

3.1 The National Health Service and Community Care Act 1990 removed Crown immunity from health authorities and other specified health service bodies from 1 April 1991. This means that for all building work the requirements of the Building Regulations 1991 (SI 1991 2768) should be observed. Approval for building work should be obtained from the building control authority, or an approved inspector. Procedural guidance is available in the document 'Building regulation and fire safety procedural guidance' issued jointly by the Department of the Environment, the Home Office and Welsh Office.

The Building Regulations (Northern Ireland) 1990 (refers to title)
The Building Standards (Scotland) Regulations 1990 (refers to title)
The Health and Personal Social Services (Northern Ireland) Order 1990, effective from 1 April 1992
The Planning and Building Regulations (Amendments) (Northern Ireland) Order 1990
Building (Amendment) Regulations (Northern Ireland) 1991

Fire Precautions Act 1971 (as amended by the Fire Safety and Safety of Places of Sports Act 1987)

3.2 The use of premises as a hospital is not a use designated for the purposes of Section 1 of the Fire Precautions Act 1971. A fire certificate issued by the local fire authority however may be required for those parts of hospitals which are used as shops, offices or factories where:

The Fire Services (Northern Ireland) Order 1984 (as amended by the Fire Services (Amendment) (Northern Ireland) Order 1993
Article 22 of the Fire Services (Northern Ireland) Order 1984

a. more than 20 persons are at work at any one time;

b. more than 10 persons are at work at any one time, elsewhere than on the ground floor of the premises.

If there are two or more shops, offices or factory premises in the building and the aggregate number of people who work there exceeds 20, or 10 elsewhere than on the ground floor, a fire certificate is again required.

3.3 Irrespective of the number of people employed, a fire certificate may be required for factory premises where explosive or highly flammable materials are stored, or used in or under, the premises.

3.4 The following Home Office publications give guidance:

a. 'Guide to fire precautions in existing places of work that require a fire certificate';

b. 'Code of practice for fire precautions in factories, offices, shops and railway premises not required to have a fire certificate'.

3.5 The local fire authority should be consulted in all cases where there is any doubt as to whether or not the premises, or part of the premises, are factories, offices or shops.

Northern Ireland Fire Authority

Offices within patient access areas

3.6 Where the aggregate number of persons at work in designated parts of patient access areas exceeds 20, or 10 elsewhere than on the ground floor, any office accommodation associated with the patient access areas will require a fire certificate. However, the means of escape from these offices should follow the guidance in Section 5.0 and the associated worksheets in this document and not the guidance in the 'Guide to fire precautions in existing places of work that require a fire certificate: factories, offices, shops and railway premises'.

4.0 Assessment areas

4.1 To evaluate the existing life risks, fire hazards and fire precautions, the hospital under consideration should be divided into a series of assessment areas. These will be determined by the functional layout of the hospital and normally each nursing and/or other management units will be an assessment area.

4.2 Assessment areas may consist of more than one fire compartment, **but the boundaries of the assessment area should be compartment walls and floors.** In assessment areas which do not contain "very high" risk patients (as defined in Worksheet 1) it is possible to accept sub-compartment walls as boundaries.

4.3 Assessment areas which contain "very high" risk patients should always be enclosed by compartment walls.

4.4 Assessment areas will not normally cover more than one floor, but may do so where a single nursing management unit incorporates sleeping areas and day spaces on separate storeys.

4.5 Escape routes from the assessment area should be included in the assessment. These escape routes may include circulation spaces, stairways, escape bed lifts, the potential for refuge in adjacent areas on the same level, escape to ground level, and final escape to a place of safety.

4.6 Assessments should be made of the hospital in operation. It is not possible for the assessment to be done before occupation.

4.7 An assessment is dependent on the activity in the assessment area, the built form, staffing and management. A change in any of these will require a new fire risk assessment.

4.8 Having divided the hospital into a series of assessment areas it is then possible to undertake the fire risk assessment. Section 5.0 and the associated worksheets cover patient access areas (wards, OPD, A&E, theatre etc). Section 6.0 covers non-patient access areas (laundries, kitchens, offices etc).

5.0 Risk assessment in patient access areas

5.1 Patient access areas, are those areas of a hospital to which patients have access either with or without supervision. They include **all** areas containing escape routes used by patients.

5.2 Commercial enterprises within hospital premises which may be frequented by patients are considered in Section 6.0.

5.3 The assessment of fire risk is done using the guidance provided in the worksheets which follow Section 6.0. The results for each assessment area are recorded on separate assessment records. It is then possible to determine any additional fire precautions which may be required by using the guidance on the compensation sheet.

5.4 The fire risk assessment comprises five stages:

a. **stage one** – considers the dependency of the patients;

b. **stage two** – considers the existing fire hazards;

c. **stage three** – considers the existing fire precautions;

d. **stage four** – is the recording on the assessment record of stages one, two and three;

e. **stage five** – considers what, if any, compensations are required.

Each stage is considered in detail below.

Stage one: life risk

5.5 Assess the life risk in the assessment area using Worksheet 1: Patients.

5.6 Patient access areas within hospitals by their very nature pose a higher level of risk than would normally be encountered. The risk to life is therefore identified, for the purposes of this document only, as follows:

a. **acceptable** – the standard stated in HTM 85;

b. **high** – as stated on Worksheet 1 of this HTM;

c. **very high** – as stated on Worksheet 1 of this HTM.

High and very high levels of fire risk should be compensated for by providing higher standards of fire precautions.

Stage two: hazards

5.7 Assess the fire hazards in the assessment area using Worksheets 2 to 12. These are grouped as follows:

a. **Ignition sources**
   2 Smoking;
   3 Fires started by patients;
   4 Arson;
   5 Work processes;
   6 Fire hazard rooms;

7 Equipment;
8 Non-patient access areas;
9 Lightning;

b. **Combustible materials**
10 Surface finishes;
11 Textiles and furniture;
12 Other materials.

5.8 Patient access areas within hospitals by their very nature pose a higher level of hazard than would normally be encountered. The hazards are therefore identified, for the purposes of this document only, as follows:

a. **acceptable** – the standard stated in HTM 85;

b. **high** – as stated on Worksheets 2 to 12 of this HTM;

c. **very high** – as stated on Worksheets 2 to 12 of this HTM.

High and very high levels of fire hazard should be compensated for by providing higher standards of fire precautions, or reduced.

Stage three: precautions

5.9 Worksheets 13 to 33 are used to assess the fire precautions in the assessment area. These are grouped as follows:

a. **Prevention**
13 Management;
14 Training;
15 Fire notices and signs;

b. **Communications**
16 Observation;
17 Alarm and detection systems;

c. **Means of escape**
18 Single direction escape;
19 Travel distance;
20 Refuge;
21 Stairways;
22 Height above ground level;
23 Escape lighting;
24 Staff;
25 Escape bed lifts;

d. **Containment**
26 Elements of structure;
27 Compartmentation;
28 Sub-division of roof and ceiling voids
29 External envelope protection;
30 Smoke control;

e. **Extinguishment**
31 Manual fire-fighting equipment;
32 Access and facilities for the fire brigade;
33 Sprinklers.

5.10 Fire precautions are graded as follows:

a. **unacceptable** – precautions which have to be improved;

b. **inadequate** – precautions which are below the standard prescribed in HTM 85, these may be either improved, or compensated for by higher standards in other precautions;

c. **HTM 85 standard** – precautions which are provided to the standard prescribed in HTM 85;

d. **high standard** – precautions which are provided to a higher standard than that prescribed in HTM 85. These may be used to compensate for deficiencies in other precautions, or for "high" or "very high" levels of risk or hazard.

5.11 The process of assessment is partly by visual survey of the assessment area and partly by desktop analysis of plans, policies and records. Each worksheet lists the activities which require visual assessment and those that require desktop assessment.

5.12 Two sample survey sheets are provided (after the worksheets) on which can be summarised life risk, hazards and precautions, and the appropriate survey methods. One sample sheet sets out the type of information which needs to be collected when examining patient access areas which include sleeping accommodation (such as wards). The other sample survey sheet sets out the type of information which needs to be collected when examining patient access areas which do not include sleeping accommodation (such as out-patients departments).

5.13 It is recommended that one of these survey sheets is completed for each assessment area, and that this information is used in conjunction with the desktop material to complete the assessment record.

5.14 The risk assessment is only a guide to identify the level of fire safety and it is not a precise tool.

5.15 It is estimated that it will take an average of one hour to evaluate the fire risks and precautions in an assessment area. However, complex assessment areas might take longer, while the assessment of a series of very similar areas will lead to savings in time due to repetition.

5.16 It is a matter of professional judgement as to what degree of tolerance can be expected in the assessment and this is one reason why the competence of assessors is essential. As a rough guide, on dimensions a tolerance of plus or minus 10% would be considered reasonable.

Stage four: assessment record

5.17 Having made the assessment using the worksheets, the assessment record needs to be completed. This will indicate the extent to which the existing safety precautions compensate for the existing risk to life and existing hazards.

5.18 For life risk tick **one** of the boxes which has not been hatched, either as:

a. **very high;**

b. **high; or**

c. **acceptable (HTM 85 standard).**

Assessment record

Worksheets

	High standard	Acceptable risk/hazard or HTM 85 standard	High risk/ Hazard	Very high risk/ hazard	In-adequate	Unaccept-able
1 Patients						
HAZARDS						
Ignition sources						
2 Smoking						
3 Fires started by patients						
4 Arson						
5 Work processes						
6 Fire hazard rooms						
7 Equipment						
8 Non patient access areas						
9 Lightning						
Combustible materials						
10 Surface finishes						
11 Textiles and furniture						
12 Other materials						
PRECAUTIONS						
Prevention						
13 Management						
14 Training						
15 Fire notices and signs						
Communications						
16 Observation						
17 Alarm and detection systems						
Means of escape						
18 Single direction escape						
19 Travel distance						
20 Refuge						
21 Stairways						
22 Height above ground level						
23 Escape lighting						
24 Staff						
25 Escape bed lifts						
Containment						
26 Elements of structure						
27 Compartmentation						
28 Sub-division of roof and ceiling voids						
29 External envelope protection						
30 Smoke control						
Extinguishment						
31 Manual fire fighting equipment						
32 Access and facilities for the fire brigade						
33 Sprinklers						

5.19 For each fire hazard tick **one** of the boxes which has not been hatched, either as:

a. **very high;**

b. **high; or**

c. **acceptable (HTM 85 standard).**

5.20 For each fire precaution tick **one** of the boxes which has not been hatched, either as:

a. **unacceptable;**

b. **inadequate;**

c. **acceptable (HTM 85 standard); or**

d. **high.**

5.21 There can only be one tick against life risk, each fire hazard and each precaution. Hatched boxes should not be ticked.

5.22 Once the assessment has been recorded the results can be analysed:

a. ticks in the "unacceptable" column indicate a level of precaution which cannot be permitted. These precautions need to be improved;

b. ticks in the columns; "very high", "inadequate", or "high", indicate a level of risk, hazard, or precaution which does not satisfy the HTM 85 standard, but which it may be possible to permit provided other relevant precautions are at a "high standard" in order to compensate;

c. ticks in the "acceptable (HTM 85 standard)" column indicate a level of risk, hazard, or precaution which satisfies the standard laid down in HTM 85 and is therefore acceptable;

d. ticks in the "high standard" column indicate a level of provision in these precautions which is higher than that required under HTM 85, and which may therefore be used to compensate for deficiencies elsewhere.

Stage five: compensation sheet

5.23 Assessment areas with risk and hazard levels no higher than those stated in HTM 85 require precautions only to the standards prescribed in that document. Higher standards of precautions will be required to compensate in the following circumstances:

a. where the level of life risk or hazard is higher than that stated in HTM 85;

b. where it is not possible to provide the minimum level of fire precautions required in HTM 85.

5.24 The compensation sheet is used to identify improvements, if any, which are required to achieve an acceptable level of fire safety. This is done after the assessment has taken place for two purposes:

a. to establish if higher levels of risk or hazard, or deficient precautions, are compensated for by existing "high standards" in other precautions;

b. to determine options for improving the fire safety of an assessment area where higher levels of risk or hazard, or deficient precautions, are not compensated for by existing "high standards" in other precautions.

Compensation Sheet

Precautions which can be used to compensate

Matrix one - Life risk and hazards

1	Patients	- high
1	Patients	- very high
3	Fires started by patients	- high
3	Fires started by patients	- very high
6	Fire hazard rooms	- very high
11	Textiles and furniture	- high
11	Textiles and furniture	- very high

16 Observation	17 Alarm and detection	19 Travel distance	20 Refuge	21 Stairways	22 Height above ground	23 Escape lighting	24 Staff	25 Escape bed lifts	27 Compart-mentation	30 Smoke control	32 Fire brigade	33 Sprinklers

Matrix two - Inadequate precautions

16	Observation
17	Alarm and detection systems
18	Single direction escape
19	Travel distance
20	Refuge
21	Stairways
22	Height above ground level
26	Elements of structure
29	External envelope protection

Notes:

To determine which precaution would compensate for a particular high level of risk/hazard or deficient precaution look along the row concerned:

if a box is fully hatched, then a 'high standard' of the precaution in that column will fully compensate for the life risk, fire hazard or deficient precaution;

if a box is partially hatched, then this together with other partially hatched boxes collectively represent a group of 'high standards' which will compensate for the life risk, fire hazard or deficient precaution;

if a box is blank, then this precaution cannot be used as a compensating factor.

5.25 The left-hand side of the first matrix lists life risks and hazards which might have been rated as "high" or "very high". The left-hand side of the second matrix lists all the precautions which might have been recorded as "inadequate". The top of both matrices lists the precautions where a "high" standard might serve as compensation.

5.26 To determine which precautions would compensate for a particular high level of risk or deficient precaution look along the row concerned:

- if a box is fully hatched, then a "high standard" of the precaution in that column will fully compensate for the life risk, fire hazard or deficient fire precaution;
- if a box is partially hatched, then this together with other partially hatched boxes collectively represent a group of "high standards" which will compensate for the deficient life risk, fire hazard or fire precaution;
- if the box is blank, then this precaution cannot be used as a compensating factor.

5.27 For example, a "high" hazard in "Fires started by patients" can be compensated for by a "high standard" of either "Observation" or "Alarm and detection systems".

5.28 For example, a "very high" hazard in "Fires started by patients" can be compensated for by a "high standard" of "Observation" and "Alarm and detection systems".

5.29 For example, an "inadequate" level of "Observation" can be compensated for by either a "high standard" of **one** of the following:

a. Alarm and detection systems; or

b. Staff; or

c. Sprinklers; or

d. by a "high standard" **of both** "Travel distance" and "Refuge".

5.30 It is also anticipated that the assessment process will reveal a number of minor problems and inconsistencies with hospital policy, which require immediate management action to correct. Provided that these can be immediately rectified they need not be allowed to distort the assessment or form part of the compensation process.

6.0 Fire safety in areas to which patients do not have access

Application

6.1 The guidance in this section is for those areas of the hospitals to which the patients do not have access, termed "Non-patient access areas". The fire risk assessment of these areas should be undertaken by a competent person against the standards set out below.

Fire Precautions Act 1971

6.2 Section 3.0 of this document provides guidance on the requirements of the Fire Precautions Act.

Fire Services (Northern Ireland) Order 1984

6.3 The following parts of a hospital may form designated premises:

- Administration;
- Boiler house;
- Central sterile supply departments;
- Central processing kitchens for supplying hospitals (cook/freeze meal production);
- Commercial enterprises (particularly shops);
- Electrical sub-stations (including stand-by generators);
- Hospital and ambulance maintenance workshops;
- Hospital sterilizing and disinfecting units;
- Laundries (including their boiler houses);
- Manufacturing pharmaceutical departments;
- Medical records;
- Pathology laboratories;
- Processing areas of medical photographic departments;
- Radiological departments (recovery units);
- Radiotherapy shielding workshops (manufacturing);
- Refuse collection/incineration;
- Renal units (maintenance and refurbishment);
- Telephone exchange;
- Theatre sterile supply units;
- Workshops in psychiatric and other hospitals (industrial therapy).

6.4 Specific guidance on the procedure for applying fire certificates is provided in Firecode: 'Policy and principles' and Firecode: HTM 83 – 'Fire safety in healthcare premises: General fire precautions'.

Commercial enterprises

Not Scotland. The Building Standards (Scotland) Regulations 1990. Technical Standards apply.

6.5 Commercial enterprises, mainly shops, are accessible to patients. However they are excluded from treatment here as Firecode: FPN 5 – 'Commercial enterprises on hospital premises', deals with their specific requirements for fire safety in detail. Its guidance should be followed when any commercial enterprises are provided.

Residential premises

Article 46 of the Housing (Northern Ireland) Order 1981. Guide to Means of Escape and Related Safety measures in Existing Houses in Multiple Occupation in Scotland (1988).

6.6 Staff residences, nurses homes and similar accommodation, should comply with the guidance on fire safety in Department of the Environment Circular 12/92 'Houses in multiple occupation: Guidance to local housing authorities on standards of fitness under section 352 of the Housing Act 1985'.

Licensed premises

The Licensing (Northern Ireland) Order 1990 (a)
Cinemas (Northern Ireland) Order 1990 (b)
Local Government (Miscellaneous Provisions) (Northern Ireland) Order 1985 (c)

6.7 Such premises are those which require licensing by the local authority, under one of the following Acts of Parliament;

a. the Licensing Act 1964; or

b. the Cinemas Act 1985; or

c. the Local Government Miscellaneous Provisions Act 1976.

They should comply with the guidance in 'Guide to fire precautions in existing places of entertainment and like premises', issued by the Home Office and obtainable from HMSO.

Worksheets

1: Patients

HAZARDS
2: Ignition sources – Smoking
3: Ignition sources – Fires started by patients
4: Ignition sources – Arson
5: Ignition sources – Work processes
6: Ignition sources – Fire hazard rooms
7: Ignition sources – Equipment
8: Ignition sources – Non-patient access areas
9: Ignition sources – Lightning
10: Combustible materials – Surface finishes
11: Combustible materials – Textiles and furniture
12: Combustible materials – Other materials

PRECAUTIONS
13: Prevention – Management
14: Prevention – Training
15: Prevention – Fire notices and signs
16: Communications – Observation
17: Communications – Alarm and detection systems
18: Means of escape – Single direction escape
19: Means of escape – Travel distance
20: Means of escape – Refuge
21: Means of escape – Stairways
22: Means of escape – Height above ground level
23: Means of escape – Escape lighting
24: Means of escape – Staff
25: Means of escape – Escape bed lifts
26: Containment – Elements of structure
27: Containment – Compartmentation
28: Containment – Sub-division of roof and ceiling voids
29: Containment – External envelope protection
30: Containment – Smoke control
31: Extinguishment – Manual fire-fighting equipment
32: Extinguishment – Access and facilities for the fire brigade
33: Extinguishment – Sprinklers

1 Patients

Evaluate the risk to patients in the assessment area based on their mobility, alertness, and responsiveness.

Acceptable (HTM 85 Standard)
All patients except those listed in the "high risk" and "very high risk" categories.

High

a. those who cannot walk either with or without assistance;
b. those with learning difficulties;
c. those who suffer from mental illness.

Very high

Those whose clinical treatment and/or condition creates a high dependency on clinical staff. For example; those in intensive therapy units, special care baby units, and operating departments.

Notes:

1. If the risk is higher than the acceptable level, then it will be necessary to provide additional safety precautions drawn from the following list:

16 Communications – Observation
17 Communications – Alarm and detection systems
19 Means of escape – Travel distance
20 Means of escape – Refuge
22 Means of escape – Height above ground level
23 Means of escape – Escape lighting
24 Means of escape – Staff
25 Means of escape – Escape bed lifts
33 Extinguishment – Sprinklers.

2. In addition, if the risk is higher than acceptable and there are any of the departments or areas listed in Worksheet 8 – Non-patient access areas, in adjoining compartments (either horizontally or vertically), then additional precautions will be required in those departments or areas. The additional precautions required are as follows:

a. If the patients are "high risk" there must be full automatic fire detection or an auto-suppression system in the department which poses the risk.
b. If the patients are "very high risk" there must be:
   (i) full automatic fire detection (or an auto-suppression system) in the department which poses the risk; and
   (ii) at least two hours' fire resistance in the walls and floors separating the department which poses the risk from the assessment area.

These compensations are not included on the compensation sheet as they affect the department which poses the ignition hazard rather than the assessment area.

3. Assessment areas will include a mix of people with a range of dependencies. Some will be able to escape without assistance, others will require considerable extra help to do so. Any assessment will need to be based on the clinical dependency of the majority.

Survey
Type and number of patients

2 Ignition Sources – Smoking

Evaluate the hazard due to smoking in the assessment area.

Acceptable hazard (HTM 85 Standard)
The fire hazard is acceptable if:

a. *"Smoking" and "No smoking" areas are clearly marked by appropriate signs;*

b. *smoking is prohibited in kitchens, stores, ceiling voids, ducts and basements and in parts of buildings where there is combustible storage;*

c. *sufficient and suitably-placed ashtrays or bins of an approved type are provided for the safe disposal of smoking materials, where smoking is permitted; and*

d. *day rooms and other places where smoking is permitted are inspected at regular intervals and about half an hour after they have been vacated for the night, to ensure that discarded smokers materials are removed and that they have not ignited other materials.*

Notes:

1. If the hazard is higher than acceptable, then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.
2. Smoking has shown a marked decline in recent years. However, statistics show that carelessness in the use and disposal of matches and smoking materials is still a major cause of fires. The clear aim is to discourage and restrict smoking as far as practicable and detailed guidance on promoting non-smoking on NHS premises is contained in HSG(92)4.

Survey
Inspection to verify policies

Desktop
Management policies

3 Ignition Sources – Fires Started by Patients

Evaluate the hazard of fires being started by patients, either accidentally or deliberately, in the assessment area.

Acceptable (HTM 85 Standard):
All patients except those listed in the "high" and "very high" categories

High

a. elderly people;

b. those with learning difficulties;

c. young people with disabilities.

Very high
Those who suffer from mental illness.

Notes:

1. If the hazard is higher than the acceptable level, then it will be necessary either to reduce the hazard or provide additional safety precautions drawn from the following list:
16 Communications – Observation
17 Communications – Alarm and detection systems

2. Assessment areas will include a mix of people. Any assessment will need to be based on the hazard posed by the majority.

Survey
Type and number of patients

4 Ignition Sources – Arson

Evaluate the hazard of fires being started by staff, visitors or outsiders in the assessment area.

Acceptable (HTM 85 Standard)
The hazard is acceptable if the hospital has a policy on the prevention of arson, which is specific to the individual needs faced by the hospital. This forms part of the overall fire safety policy required by Firecode: 'Policy and principles'.

Notes:

1. If the hazard is higher than acceptable , then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.

2. The policy on the prevention of arson should be part of the overall fire safety policy required by Firecode: 'Policy and principles'.

3. Guidance on the prevention of arson is available in the NHS security manual issued by the National Association of Health Authorities and Trusts and Firecode: FPN 6 – 'Arson prevention and control in NHS healthcare premises'. Aspects which may require specific consideration are:

a. site access;

b. building access;

c. design of staff circulation routes to increase passive surveillance;

d. the reduction of unfrequented areas;

e. use of CCTV and specialist security staff;

f. restricted access to sensitive areas (stores, plantrooms etc) and to disused (or derelict) buildings.

Survey
Inspection to verify policies

Desktop
Management policies

5 Ignition Sources – Work Processes

Evaluate the hazard due to work processes in the assessment area.

Acceptable (HTM 85 Standard)
The hazard is acceptable if:

a. all hazardous work processes are identified; and

b. measures are taken to ensure that all those working in these areas receive adequate training and are made aware of the potential hazards to themselves and to all others who may use the hospital;

c. safe working practices once established are adhered to and periodically re-evaluated.

Notes:

1. If the hazard is higher than acceptable , then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.

2. The following work processes can present particular hazards if adequate precautions are not taken:
Physiotherapy departments;
X-ray departments – particularly film storage.

3. Guidance on particular hazards within these areas and effective measures to reduce them is contained in Firecode: HTM 83 – 'Fire safety in healthcare premises: General fire precautions', which also contains guidance on the hazards associated with building and maintenance work within patient access areas.

Survey
Inspection to verify policies

Desktop
Management policies

6 Ignition Sources – Fire Hazard Rooms

Evaluate the fire hazard rooms and areas in the assessment area. Certain rooms within patient access areas of hospitals by their use constitute a particular fire hazard. These rooms should be enclosed in fire resisting construction to ensure that they do not present a serious fire hazard. Fire hazard rooms and areas are listed in HTM 81 – 'Fire precautions in new hospitals'.

Acceptable (HTM 85 Standard)
The hazard is acceptable if fire hazard rooms or areas are enclosed in 30 minute fire-resisting construction.

Very high
Fire hazard rooms or areas are not enclosed in 30 minute fire-resisting construction.

Notes:

1. If the hazard is higher than the acceptable level then it will either be necessary to improve the enclosure or compensate through a higher standard for a precaution drawn from the following list:
17 Communications – Alarm and detection systems
33 Extinguishment – Sprinklers.

Survey
Check integrity of enclosure

Desktop
Inspect building plans

7 Ignition Sources – Equipment

Evaluate the hazard due to equipment in the assessment area.

Acceptable (HTM 85 Standard)
The hazard is acceptable if:

a. *there is an effective programme of planned preventative maintenance in operation throughout the hospital;*

b. *there is an agreed procedure for reporting faults;*

c. *once faults are reported then action is taken to repair them or to otherwise ensure that the equipment is made safe;*

d. *each room/area has an adequate number of electrical sockets for the equipment used in that room;*

e. *complex electrical equipment is provided with clear user instructions;*

f. *extension leads, two-way adaptors etc are only used under the direction of a suitably-qualified member of staff;*

g. *the wiring of plugs by untrained staff and the use of personal items of electrical equipment is not permitted.*

Notes:

1. If the hazard is higher than acceptable, then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.

Survey
Inspection to verify policies

Desktop
Management policies

8 Ignition Sources – Non-patient Access Areas

Evaluate the hazard due to fires starting outside the assessment area.

Acceptable (HTM 85 Standard)

The fire hazard is acceptable if the following are not in the same compartment as the assessment area.

Boiler houses;
Central sterile supply;
Central staff changing;
Flammable stores;
Hospital sterilizing and disinfecting unit;
Laundries;
Main electrical gear;
Main kitchens;
Main stores;
Medical gas store;
Medical records;
Pathology;
Patient services;
Pharmaceutical (manufacturing);
Refuse collection/disposal areas, incineration;
Works.

Notes:

1. If the hazard is higher than the acceptable level, then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.

2. If the life risk in the assessment area is higher than acceptable (see Worksheet 1: Patients) and there is one of these departments or areas in a compartment adjoining the assessment area (either horizontally or vertically), then additional precautions will be required in the departments or areas which pose the threat. These are detailed on Worksheet 1: Patients.

3. Main medical gas stores should always be located in separate buildings. HTM 2022 – 'Medical gas pipeline systems' gives guidance.

Survey
External inspection

Desktop
Building plans

9 Ignition Sources – Lightning

Evaluate the hazard due to lightning in the assessment area.

Acceptable (HTM 85 Standard)
The fire hazard is acceptable if the hospital is provided with adequate protection against lightning. All lightning protection systems are visually inspected once in every 12-month period, by a suitably-qualified person and a record of inspections is maintained.

Notes:

1. If the hazard is higher than acceptable, then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.

2. BS6651:1992 gives guidance on the design of systems for the protection of structures against lightning and all new systems should comply with its requirements. The design of lightning protection systems is specialised and advice should be taken from a suitably-qualified person or installer on the specific protection required for each building.

Desktop
Inspect records

10 Combustible Materials – Surface Finishes

Evaluate the fire hazard due to the likely spread of flame over the surface materials in the assessment area as follows:

Acceptable (HTM 85 Standard)
The hazard is acceptable if all wall and ceiling finishes meet the following classifications:

Location	*Walls*	*Ceilings*
Circulation spaces	*Class 0*	*Class 0*
Other rooms	*Class 0*	*Class 1*
Small rooms (up to 4m²)	*Class 1*	*Class 1*

Notes:

1. If the hazard is higher than acceptable, then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.

2. Surface finishes which can be effectively tested for 'surface spread of flame' are rated for performance by reference to the method specified in BS476:Part 7:1971 or 1987 under which materials or products are classified 1, 2, 3 or 4 with Class 1 being the highest.

3. Class 0 is the highest product performance classification, however, it is not a classification identified in any British Standard test. Class 0 is defined in the Department of the Environment's Approved Document to Part B of the Building Regulations.

4. The following generic materials and products all achieve a Class 0 rating:

a. products classified as non-combustible when tested to BS476:Part 4:1970 or Part 11:1982;

b. brickwork, blockwork, concrete and ceramic tiles;

c. plasterboard (painted or not, or with a PVC facing not more than 0.5 mm thick) with or without an air gap or fibrous or cellular insulating material behind;

d. woodwool cement slabs;

e. mineral fibre tiles or sheets with cement or resin binding.

Continued on next page

10 Combustible Materials – Surface Finishes

Continued from previous page

5. The following may achieve the ratings listed below. However as the properties of different products with the same generic description vary, the ratings of these materials/products should be substantiated by test evidence:

Class 0 – aluminium-faced fibre insulating board, flame retardant decorative laminates on calcium silicate board, thick polycarbonate sheet, phenolic sheet and UPVC;

Class 1 – phenolic or melamine laminates on a calcium silicate substrate and flame-retardant decorative laminates on a combustible core.

6. Where walls are covered by temporary surfaces, (such as posters, fabrics, prints, decorations etc) the significance of these needs to be considered.

7. Where walls have been subject to repeated painting, over a number of years, with gloss paints, the accumulated thickness of paint film may present a high fuel hazard and provide for rapid transfer of fire over its surface. Where this situation exists, specialist technical advice should be obtained. The use of anti-graffiti and intumescent paints requires careful consideration, especially when they are applied over existing painted surfaces, full technical guidance should always be obtained from the manufacturer.

8. Small areas with finishes lower than specified are permitted provided they do not amount to more than 5% of the total wall areas (for example notice-boards).

9. The finish applied to a floor may also contribute to the spread of fire. HTM 61 – 'Flooring', gives guidance on the selection of floor finishes for hospitals.

10. Although hard flooring is not considered a fire hazard, the finish applied to certain flooring materials may, over a period of time, accumulate and constitute a fire hazard. The accumulation, over a number of years, of wax polish applied to a timber floor will pose a significant fire hazard.

11 Combustible Materials – Textiles and Furniture

Evaluate the hazard posed by the furniture and furnishings in the assessment area as follows:

Acceptable (HTM 85 Standard)
The hazard is acceptable, if more than 75 per cent of all items of textiles and furniture achieve the standard required in HTM 87, and there is an agreed policy of planned replacement and maintenance to comply with Firecode: HTM 87 – 'Textiles and furniture'.

High
50–75% of all items of textiles and furniture comply with standards laid down in HTM 87.

Very high
Less than 50% of all items of textiles and furniture comply with standards laid down in HTM 87.

Notes:

1. If the fire hazard is higher than the acceptable level, then it will be necessary to either reduce the hazard or provide additional safety precautions drawn from the following list:
16 Communications – Observation
17 Communications – Alarm and detection systems

Survey
Inspect labels

Desktop
Management policies

12 Combustible Materials – Other Materials

Evaluate the hazard due to other combustible materials in the assessment area.

Acceptable (HTM 85 Standard)
The hazard is acceptable if all combustible materials are identified and stored in accordance with the guidance in Firecode: HTM 83 – 'Fire safety in healthcare premises: General fire precautions' and FPN 2 – 'Storage of flammable liquids'.

Notes:

1. If the hazard is higher than acceptable , then it is considered to be "very high" and must be reduced. It is not possible to accept or compensate for a "very high" level of this hazard.

2. The following are examples of other combustible materials which may be found within hospitals:
Flammable liquids;
Aerosol sprays;
Medical gases;
Liquified petroleum gases;
Disposable goods and packaging made from paper, plastic and expanded foam;
Combustible waste.
The list is not definitive and other combustible materials may be present in patient access areas of hospitals.

Survey
Inspection to verify policies

Desktop
Management policies

13 Prevention – Management

Evaluate the assessment area to establish if the management of fire safety within the hospital achieves the standard set down in HTM 85.

HTM 85 Standard

Chief executives of the trusts, and general managers of health authorities' premises should:

a. *ensure that their management policies regarding fire safety comply with the relevant guidance in Firecode: 'Policy and principles';*

b. *ensure that sufficient and adequately-trained staff are available at all times (day and night), to provide for the safe evacuation of patients from the assessment area, in accordance with the emergency evacuation plan;*

c. *maintain an up-to-date set of drawings showing the assessment areas, which indicate: alarm and detection systems, means of escape, containment, first aid fire-fighting equipment, and fire brigade access;*

d. *keep records for a minimum of three years of all maintenance work, instruction and training and fire drills.*

Notes:

1. It is not possible to accept or compensate for a lower standard.

2. Should a higher standard be provided this cannot be used as a compensatory factor for either higher levels of risk/hazard or deficiencies in other precautions.

3. The responsibility of management to maintain an effective policy regarding fire precautions is identified in Firecode: 'Policy and principles'.

4. Records should include details of the testing and maintenance of the following:

a. the means for detecting and for giving warning in the case of fire;
b. the means for fighting fire;
c. any smoke management, smoke control or smoke venting systems;
d. escape lighting systems;

together with details of:

e. instruction and training; and
f. fire drills.

5. Records should further include:

a. the date on which the testing and maintenance was carried out and by whom;
b. the date on which any defects are reported and the action taken to remedy such defects; and
c. the date on which the defect was remedied and by whom.

Desktop
Management policies and records

14 Prevention – Training

Evaluate the assessment area to establish if the training of staff achieves the standard set down in HTM 85.

HTM 85 Standard

a. *All staff, including part-time and agency staff, are trained in fire safety in accordance with guidance contained in Firecode: HTM 83 – 'Fire safety in healthcare premises: General fire precautions' and Firecode: 'Policy and principles';*

b. *non-NHS staff employed within the hospital by others also receive appropriate training in fire safety;*

c. *instruction in fire safety is given by a suitably-competent person, so that each member of staff receives instruction at least once in every period of twelve months;*

d. *additional training is provided for nominated officers (fire) and their deputies;*

e. *specific training is provided for all staff who regularly deal with flammable materials, or heat-producing equipment;*

f. *staff involved in the selection, installation, operation and maintenance of fire alarm and detection systems are conversant with the requirements of Firecode: HTM 82 – 'Alarm and detection systems' and receive adequate training in accordance with the appropriate section of that HTM; and*

g. *persons visiting the premises on a regular basis receive appropriate training in fire safety.*

Notes:

1. It is not possible to accept or compensate for a lower standard.

2. Should a higher standard be provided this cannot be used as a compensatory factor for either higher levels of risk/hazard or deficiencies in other precautions.

3. All staff (including managers and senior staff in **all** professions) should receive basic instruction in fire safety and other fire training appropriate to their specific needs. Senior staff should lead by example.

4. Where certain services (catering, cleaning etc) are provided by non-NHS organisations, the availability of staff to assist with patient evacuation may be limited. Where for fire safety purposes non-NHS staff are required to assist in patient evacuation, it is essential that this is discussed and agreed, and then stated in the contract between the trust/health authority and the provider of the service. Firecode: FPN 5 – 'Commercial enterprises on hospital premises' gives additional guidance.

Continued on next page

Continued from previous page

5. Staff training should be specific to the normal place of work and cover:

a. fire prevention;
b. the correct action to be taken when a fire is discovered;
c. evacuation and escape procedures;
d. an appreciation of the importance of fire doors and their correct use and avoidance of abuse;
e. use of first aid fire-fighting equipment provided including, where appropriate, practical demonstrations;

6. Records kept of training and instruction should include:

a. the date of the instruction or exercise;
b. the duration;
c. the name of the person giving instruction;
d. the names of the people receiving the instruction;
e. the nature of the instruction, training or drill.

7. When the fire drill discloses defects in the emergency plan, the means of escape or the means for giving warning, the record should include every defect and details of the action taken to remedy them.

15 Prevention – Fire Notices and Signs

Evaluate the assessment area to establish if the fire notices and signs achieve the standard set down in HTM 85.

HTM 85 Standard:
Fire notices are permanently displayed in conspicuous positions throughout the assessment area and should be specific to it. Additional notices giving further instruction are displayed on staff notice-boards and in staff common rooms and residential accommodation. Fire signs are provided where appropriate in conspicuous positions. A planned programme for the replacement of signs not complying with the latest guidance exists and forms part of the fire safety programme.

Notes:

1. It is not possible to accept or compensate for a lower standard.

2. Should a higher standard be provided this cannot be used as a compensatory factor for either higher levels of risk/hazard or deficiencies in other precautions.

3. The purpose of fire notices is to give concise instructions of the actions to be taken on discovering a fire and on hearing the alarm. Details of the emergency evacuation plan relevant to the assessment area should be included.

4. Fire signs should be recognisable, readable and informative. They convey essential information to regular and infrequent users of the premises, and the fire brigade. The visibility, illumination and height of display should be carefully considered.

5. Guidance on the contents of fire notices and signs is provided in Firecode: HTM 83 – 'Fire safety in healthcare premises: General fire precautions', and HTM 65 – 'Signs guide 2: Fire safety signs'.

Survey
Inspection to verify policies

Desktop
Management policy on replacement

16 Communications – Observation

In sleeping areas, evaluate the amount of observation possible from the staff base.

Inadequate
Less than 30 per cent of beds are under visual observation from the staff base.

HTM 85 Standard:
Between 30 and 60 per cent of beds are under visual observation from the staff base.

High Standard
More than 60 per cent of beds under visual observation from the staff base.

Notes:

1. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through higher standards of precautions drawn from the following list:
- 17 Communications – Alarm and detection systems;
- 19 Means of escape – Travel distance;
- 20 Means of escape – Refuge;
- 24 Means of escape – Staff;
- 33 Extinguishment – Sprinklers.

2. If the precaution is to "HTM 85 Standard" then it is satisfactory.

3. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher levels of risk/hazard or deficient precautions:
- 1 Patients;
- 3 Ignition sources – Fires started by patients;
- 11 Combustible materials – Textiles and furniture;
- 17 Communications – Alarm and detection systems;
- 18 Means of escape – Single direction escape;
- 19 Means of escape – Travel distance.

4. The staff base is the location within the nursing management area from which all staff work, and where information is stored and exchanged. Although it is unlikely that the staff base will be permanently staffed, a location which provides good observation will improve the likelihood of a fire being detected at an early stage.

5. In assessment areas which do not contain sleeping areas, observation is always assumed to be acceptable and to the HTM 85 Standard.

Survey
Amount of observation

17 Communications – Alarm and Detection Systems

Evaluate the alarm and detection systems within the assessment area.

Unacceptable
A lower level than inadequate.

Inadequate
The alarm and detection system complies with the guidance in Firecode: HTM 82 – 'Alarm and detection systems', with the exception that automatic detection is not provided in any part of the assessment area.

HTM 85 Standard:
The alarm and detection system should comply with the guidance in Firecode: HTM 82 – 'Alarm and detection systems'.

High standard
The alarm and detection system should be an addressable analogue system complying with the guidance in Firecode: HTM 82 – 'Alarm and detection systems', with automatic detection provided in all sleeping areas, fire hazard rooms, and circulation spaces.

Survey
Inspect alarm and detection equipment

Desktop
Inspect building plans

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through higher standards of precautions drawn from the following list:
16 Communications – Observation;
24 Means of escape – Staff;
33 Extinguishment – Sprinklers.

3. If the precaution is to "HTM 85 Standard" then it is satisfactory.

4. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher levels of risk/hazard or deficient precautions:
1 Patients;
3 Ignition sources – Fires started by patients;
6 Ignition sources – Fire hazard rooms;
11 Combustible materials – Textiles and furniture;
16 Communications – Observation;
18 Means of escape – Single direction escape;
19 Means of escape – Travel distance.

5. Firecode: HTM 82 – 'Alarm and detection systems', provides general principles and technical guidance on the design, specification, installation, commissioning, testing, operation and maintenance of fire alarm systems in hospitals. It should be read in conjunction with BS5839:Part 1:1988 – Fire detection and alarm systems for buildings: Code of practice for system design, installation and servicing.

18 Means of Escape – Single Direction Escape

Evaluate the maximum distance to be travelled before there is a choice of escape routes.

Unacceptable
Over 20 metres.

Inadequate
15–20 metres.

HTM 85 Standard:
0–15 metres.

Notes

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through higher standards of precautions drawn from the following list:
16 Communications – Observation;
17 Communications – Alarm and detection systems;
19 Means of escape – Travel distance;
23 Means of escape – Escape lighting;
24 Means of escape – Staff;
30 Containment – Smoke control.

3. If the precaution is to "HTM 85 Standard" then it is satisfactory.

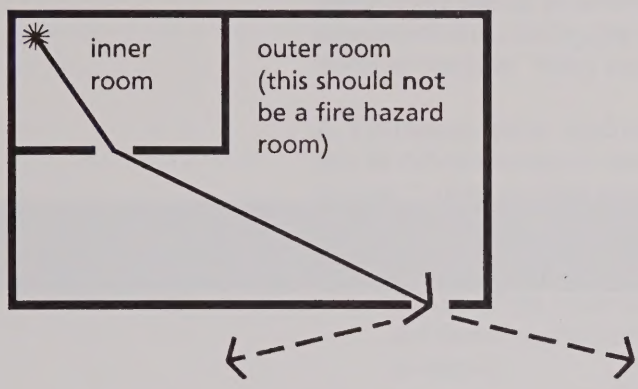
4. Single direction escape may include escape from an inner room (a room only accessible through an access room), provided that the total distance to be travelled before there is a choice of escape routes is considered and that the access room is not a fire hazard room.

Survey
Measure distance to be travelled before there is a choice of escape routes

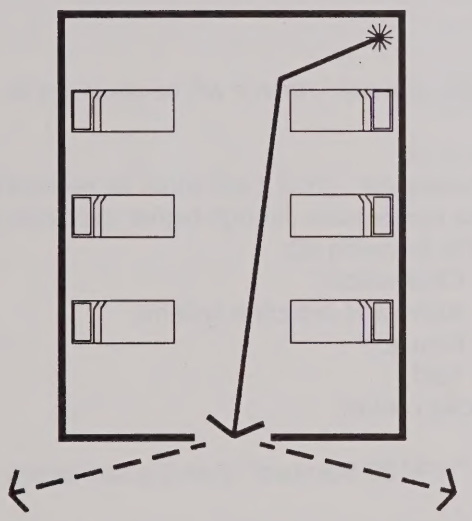
Diagram 1 Single direction escape

Maximum travel distance in a single direction of escape, before there is a choice of escape routes:

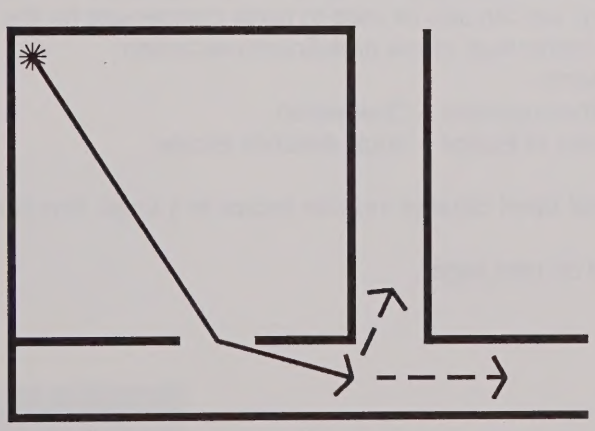
over 20 metres -	**Unacceptable**
15 to 20 metres -	**Inadequate**
0 to 15 metres -	**HTM 85 standard**



Single direction escape in this instance includes:
travel within the inner room;
and
travel within the outer room.



Single direction escape in this instance includes only travel within the room.



Single direction escape in this instance includes:
travel within the room;
and
travel within the circulation space until there is a choice of escape routes.

19 Means of Escape – Travel Distance

Travel distance is the maximum horizontal distance to be travelled between any point to an adjoining compartment, or sub-compartment, or escape stairway, or to the outside. The first part of this may be escape in a single direction before there is a choice of escape routes.

Evaluate the maximum travel distance.

Unacceptable
Over 40 metres.

Inadequate
30–40 metres.

HTM 85 Standard:
20–30 metres.

High standard
0–20 metres.

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through higher standards of precautions drawn from the following list:
16 Communications – Observation;
17 Communications – Alarm and detection systems;
20 Means of escape – Refuge;
24 Means of escape – Staff;
30 Containment – Smoke control.

3. If the precaution is to "HTM 85 Standard" then it is satisfactory.

4. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher level of risk or deficient precaution:
1 Patients;
16 Communications – Observation
18 Means of escape – Single direction escape

5. The total travel distance includes escape in a single direction.

Continued on next page

19 Means of Escape – Travel Distance

Continued from previous page

6. The design of circulation spaces should ensure that it is possible to evacuate all patients from the assessment area by the most appropriate method. In order to assess the suitability of circulation spaces there should be an emergency evacuation plan for the assessment area, stating the preferred methods of evacuation. (Refer to Firecode: 'Policy and principles' Section 3.0.)

7. Circulation spaces need not necessarily be corridors. They may also be defined routes in open areas. Health Building Note 40 Volume 2, gives detailed guidance on circulation spaces.

8. A flat roof may form part of an escape route provided:

a. the use of the route would not be prejudiced by smoke and flame issuing from openings in the buildings envelope;

b. the roof construction will provide a period of fire resistance of at least 60 minutes;

c. the route is defined, has a non-slip surface, and adequate handrails;

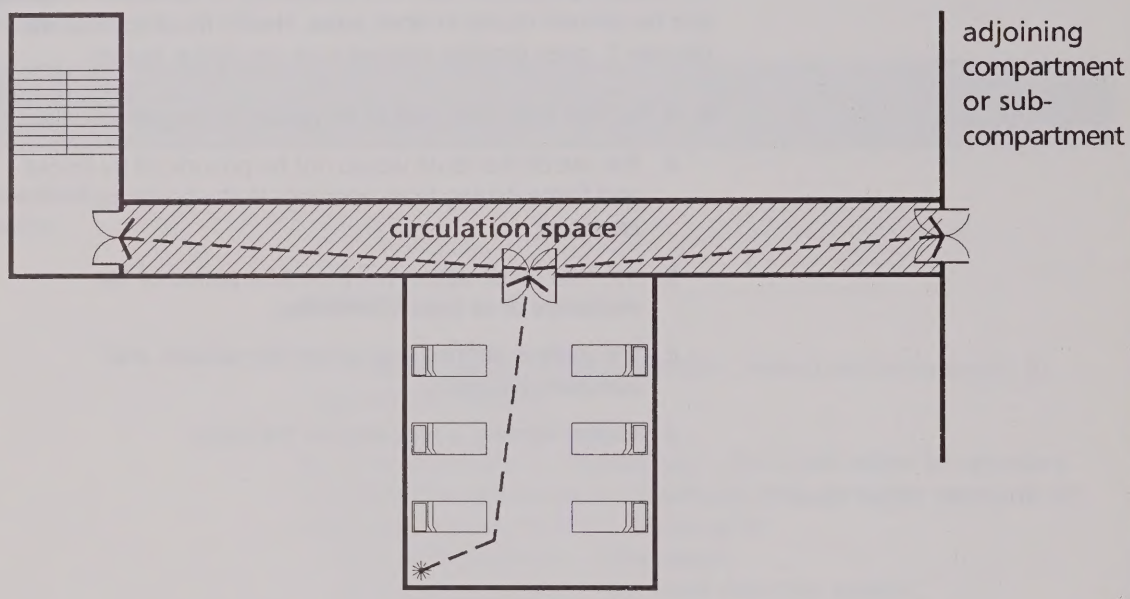
d. escape lighting is provided for the route.

Survey
Measure total travel distance

Diagram 2 Travel distance

Maximum horizontal travel distance to an adjoining compartment or sub-compartment:

over 40 metres -	**Unacceptable**
30 to 40 metres -	**Inadequate**
20 to 30 metres -	**HTM 85 standard**
less than 20 metres -	**High standard**



Note:
Travel distance includes single direction escape.

20 Means of Escape – Refuge

Evacuation should initially be planned as a series of progressive horizontal moves to behind fire-resisting barriers. It should therefore be possible to move from one compartment (or sub-compartment), to another compartment (or sub-compartment) capable of holding all those threatened, without a significant change in level, and from which there is the potential for further escape should that become necessary.

Evaluate the potential for refuge either elsewhere within the assessment area, or elsewhere on the same floor level.

Inadequate
There is no potential for refuge on this floor level because there is only one assessment area and it is not divided into separate compartments (or sub-compartments).

HTM 85 Standard:
There are at least two separate compartments (or sub-compartments) on the this floor level. Each of which has a minimum of two exits as follows:

a. one to an adjoining compartment or sub-compartment; and

b. one to another adjoining compartment or sub-compartment, or to an escape stairway, or to the outside.

High standard
There are at least three compartments (or sub-compartments) on this floor level. Each of which has a minimum of three exits as follows:

a. two to an adjoining compartment or sub-compartment; and

b. one to another adjoining compartment or sub-compartment, or to an escape stairway, or to the outside.

Notes:

1. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through higher standards of precautions drawn from the following list:
22 Means of escape – Height above ground level;
27 Containment – Compartmentation.

2. If the precaution is to "HTM 85 Standard" then it is satisfactory.

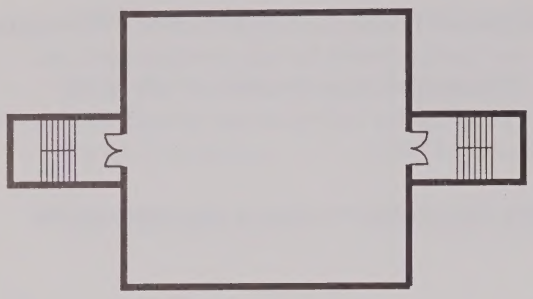
3. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher levels of risk or deficient precautions:
1 Patients;
16 Communications – Observation;
19 Means of escape – Travel distance;
22 Means of escape – Height above ground level.

Survey
Visual inspection

Desktop
Inspect building plans

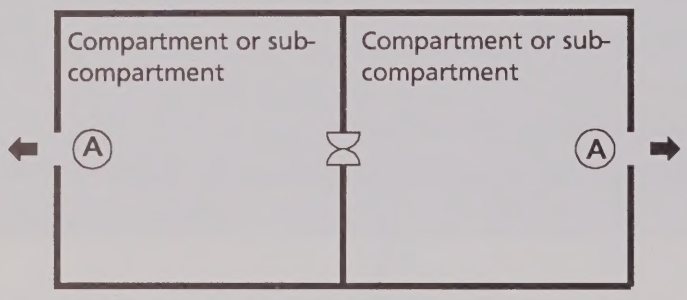
Diagram 3 Refuge

Inadequate



no potential for refuge

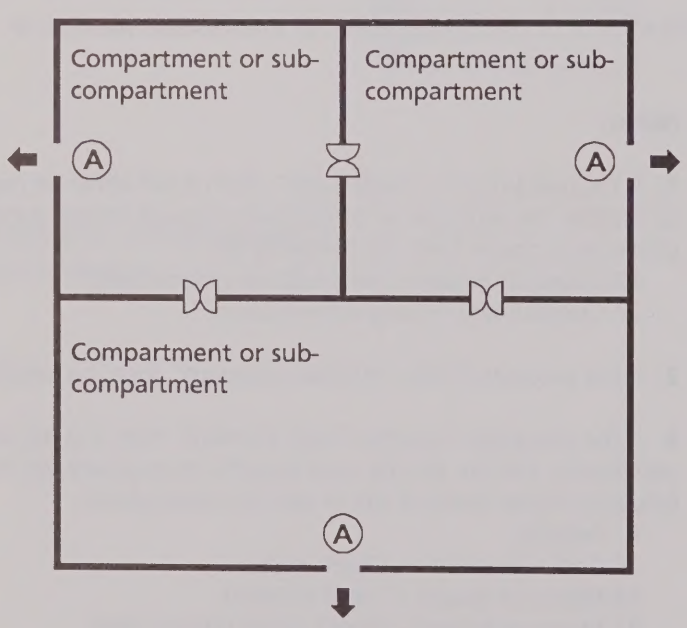
HTM 85 Standard



one exit to an adjoining compartment or sub-compartment;

one exit (A) to another adjoining compartment or sub-compartment, or to an escape stairway, or to the outside.

High Standard



two exits to adjoining compartments or sub-compartments;

one exit (A) to another adjoining compartment or sub-compartment, or to an escape stairway, or to the outside.

21 Means of Escape – Stairways

Evaluate the stairways and circulation routes which link the assessment area to the outside at ground level.

Unacceptable
An inadequate number of suitable stairways, possibly single stairway access.

Inadequate
An adequate number of suitable stairways, however one or more of these is external.

HTM 85 Standard:
An adequate number of suitable internal stairways.

High standard
More than an adequate number of suitable internal stairways.

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through a higher standard of:
22 Means of escape – Height above ground level.

3. If the precaution is to "HTM 85 Standard" then it is satisfactory.

4. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for a deficiency in:
22 Means of escape – Height above ground level.

5. Escape vertically to the ground floor will involve consideration of spaces outside the assessment area under consideration.

6. If the assessment area has direct access to the ground floor at ground level then it meets the HTM 85 Standard.

7. The positioning and design of stairways should ensure that it is possible to evacuate all patients by the most appropriate method, from the assessment area. In order to assess the suitability of stairways, there should be an emergency evacuation plan for the assessment area, stating the preferred methods of evacuation. (Refer to Firecode: 'Policy and principles' Section 3.0.)

Continued on next page

21 Means of Escape – Stairways

Continued from previous page

8. A stairway will be considered suitable if it has direct access, or protected access, to the outside at ground level. Such access should be suitable for the evacuation of patients and lead to a place of safety away from the building.

9. The table below can be used to determine what is a sufficient number of stairways.

Number of patient beds on any upper storey	Number of stairways
1–100	2
101–200	3
201–300	4
301–400	5

Above 400 beds – provide an additional stairway for every additional 100 beds.

10. A stairway may serve more than one assessment area, but the aggregate width of the stairways provided shall be sufficient for the number of persons likely to be evacuated, taking into account the evacuation policy of the hospital.

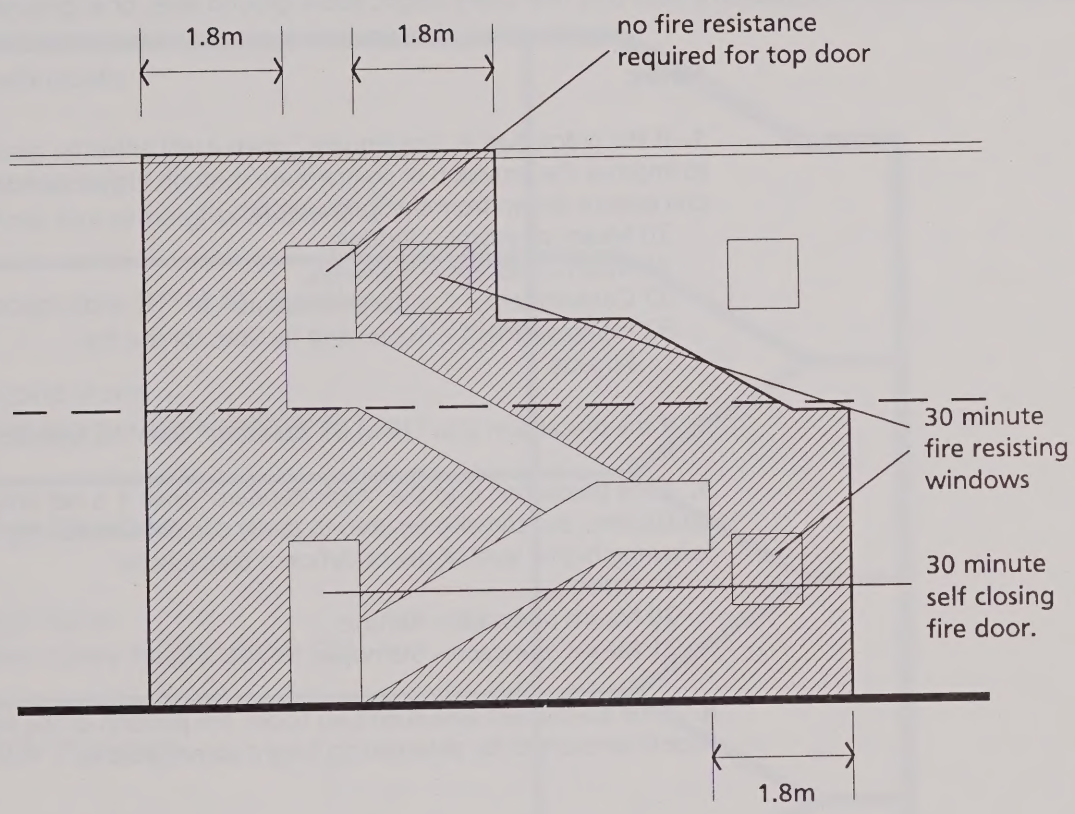
11. External stairways should not be prejudiced by smoke and flames issuing from openings in the building envelope (for example, windows, doors). Diagram 4 gives guidance.

Survey
Visual check

Desktop
Inspect building plans

Diagram 4 Fire resistance of areas around external stairways

Hatching indicates area of external wall which should be of fire-resisting construction. Windows within hatched area should provide a period of fire resistance of at least 30 minutes.



22 Means of Escape – Height Above Ground Level

Evaluate the height of the assessment area above ground level.

Inadequate
The assessment area is located on a floor three or more storey heights above ground level.

HTM 85 Standard:
The assessment area is located on a floor two storey heights above ground level.

High standard
The assessment area is located on a floor only one storey height above ground level, or at ground level.

Notes:

1. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through higher standards of precautions drawn from the following list:
- 20 Means of escape – Refuge;
- 21 Means of escape – Stairways;
- 27 Containment – Compartmentation;
- 32 Extinguishment – Access and facilities for the fire brigade.

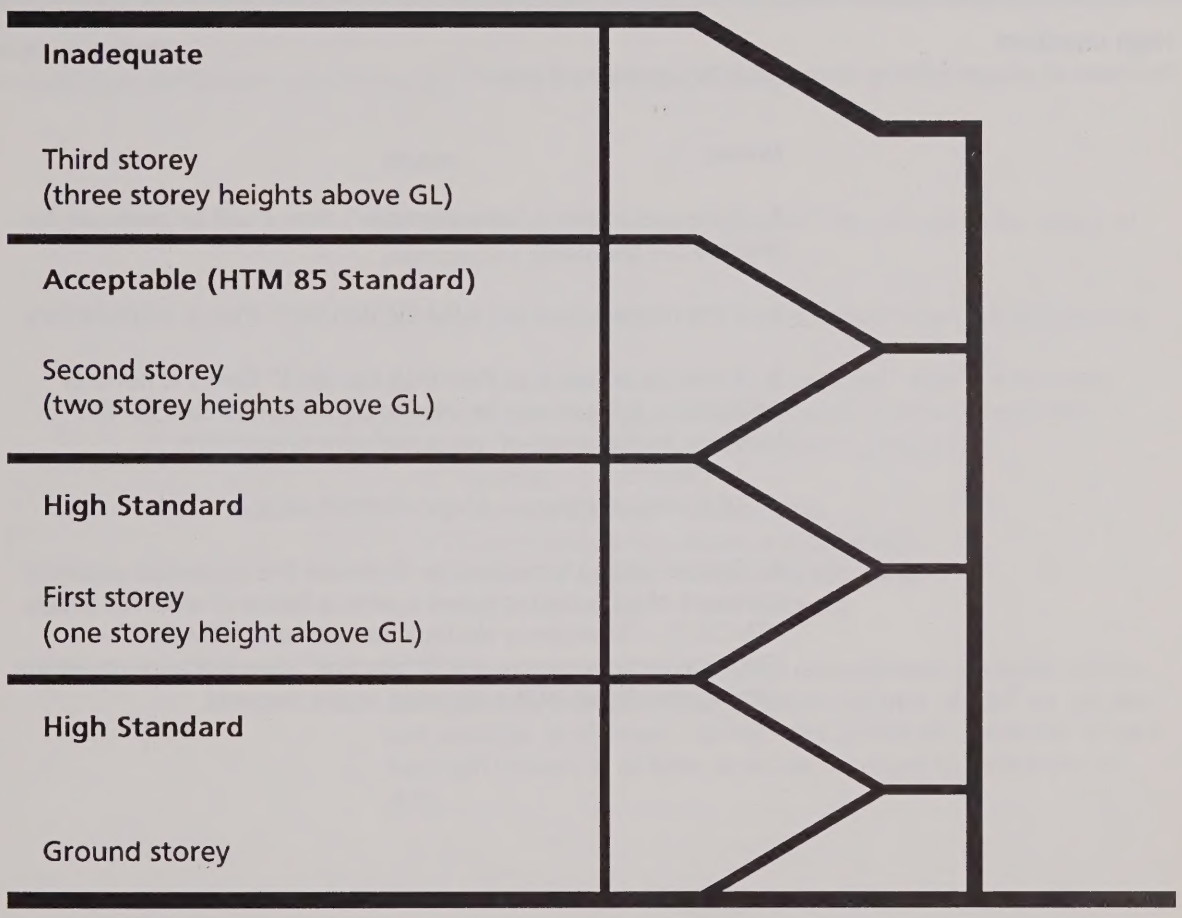
2. If the precaution is to "HTM 85 Standard" then it is satisfactory.

3. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher level of risk or deficient precautions:
- 1 Patients;
- 20 Means of escape – Refuge;
- 21 Means of escape – Stairways.

4. If the assessment area is on two floors, the position of the higher floor is considered for determining height above ground.

Survey
What floor are you on?

Diagram 5 Height above ground



23 Means of Escape – Escape Lighting

Evaluate the escape lighting within the assessment area.

Unacceptable
Escape lighting is not provided at all the locations specified in HTM 2011 – 'Emergency electrical services', and there is no programme for the upgrading of escape lighting.

HTM 85 Standard:
Escape lighting is either already provided at the locations specified in HTM 2011 – 'Emergency electrical services', or there is a planned programme for upgrading which forms part of the fire safety programme.

High standard
Provision of escape lighting throughout the assessment area.

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is to "HTM 85 Standard" then it is satisfactory.

3. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher levels of risk or deficient precautions:
1 Patients;
18 Means of escape – Single direction escape.

4. Escape lighting is required to illuminate the circulation spaces in the event of a fire and to guard against a failure of electrical supply. HTM 2011 – 'Emergency electrical services' and HTM 2007 – 'Electrical services: supply and distribution', give guidance on escape lighting and details of the electrical supply required.

Survey
Visual check

Desktop
Inspect building plans

24 Means of Escape – Staff

Evaluate the number of staff present within the assessment area when it is in use.

Unacceptable
Less than two staff present in the assessment area at all times, or less than three staff where the number of patients exceeds 30.

HTM 85 Standard:
A minimum of two staff present at all times (three if there are over 30 patients). These staff have received training in the methods of patient evacuation appropriate to the dependency of the patient and are familiar with the evacuation procedures at their place of work.

High standard
At least four staff present at all times (six if there are over 30 patients).

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is to "HTM 85 Standard" then it is satisfactory.

3. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher levels of risk or deficient precautions:
1 Patients
16 Communications – Observation;
17 Communications – Alarm and detection;
18 Means of escape – Single direction escape;
19 Means of escape – Travel distance.

4. It is the responsibility of hospital management to devise suitable arrangements to ensure that adequate numbers of staff are on duty and available at all times – during meal breaks etc. Generally to have two staff present at all times it will be necessary to have three on duty.

Survey
Count and ask staff

25 Means of Escape – Escape Bed Lifts

The HTM 85 Standard does not require the installation of escape bed lifts, however their provision will constitute a "high standard".

High standard
A minimum of two escape bed lifts, which comply with the guidance in Firecode: FPN 3 – 'Escape bed lifts', are provided. They are remote from each other so that in the event of a fire at least one is available for evacuation purposes.

Notes:

1. If no escape bed lifts are provided the standard is satisfactory.

2. If the precaution is to the "high standard" then it is not only satisfactory but it can also be used to partly compensate for the following higher level of risk:
1 Patients.

3. The lift lobby at ground level should provide direct access, or protected access, to the outside.

Survey
Visual check

Desktop
Inspect building plans

26 Containment – Elements of Structure

Evaluate the fire resistance of the elements of structure.

Unacceptable
The elements of structure **do not** provide the following minimum periods of fire resistance:

hospitals with floors four or fewer storey heights above ground	30 minutes
hospitals with floors above four storey heights above ground	60 minutes
hospital basements two or more storeys deep	60 minutes

Inadequate
The minimum period of fire resistance provided by the elements of structure is:

hospitals with floors between one and four storey heights above ground	30 minutes
hospitals with floors above four storey heights above ground	60 minutes
hospital basements two or more storeys deep	60 minutes

HTM 85 Standard:
The minimum period of fire resistance provided by the elements of structure is:

single-storey hospitals	30 minutes
hospitals with floors between one and four storey heights above ground	60 minutes
hospitals with floors above four storey heights above ground	90 minutes
hospital basements two or more storeys deep	90 minutes

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through a higher standard of:
33 Extinguishment – Sprinklers.

3. If the precaution is to "HTM 85 Standard" then it is satisfactory.

4. For the purposes of this document elements of structure are:
a. a column, beam, or other member forming part of a structural frame;
b. a load-bearing wall;
c. a floor.

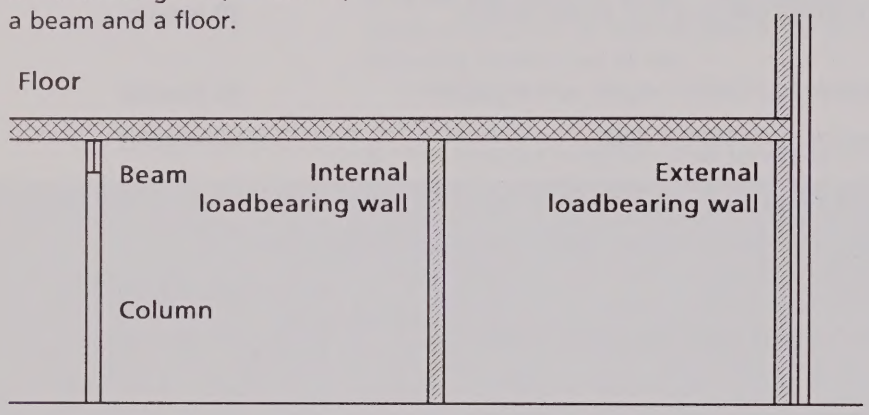
Desktop
Inspect building plans

Diagram 6 Elements of structure

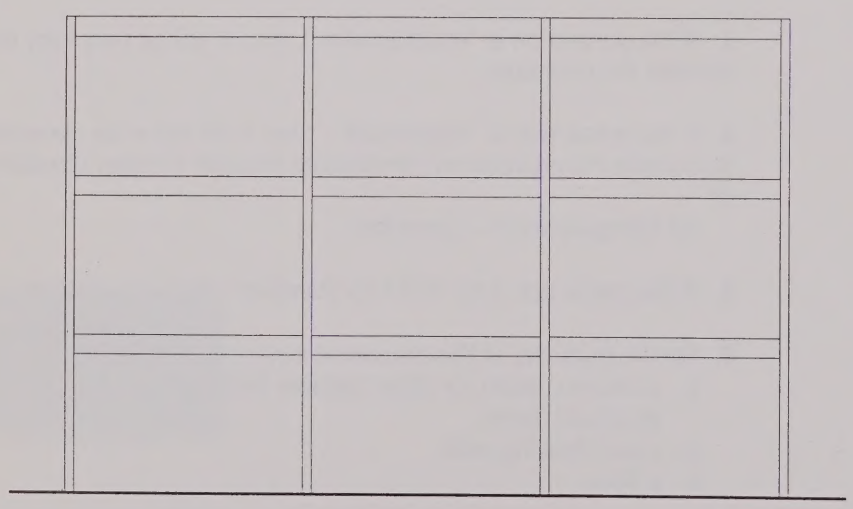
Minimum period of resistance	Inadequate	HTM 85 Standard
Single storey hospitals	-	30 minutes
Hospitals with floors between one and four storey heights above ground	30 minutes	60 minutes
Hospitals with floors above four storey heights above ground	60 minutes	90 minutes
Hospital basements two or more storeys deep	60 minutes	90 minutes

'Unacceptable' standard is less than that provided by the 'inadequate' standard.

Elements of structure:
a loadbearing wall, a column,
a beam and a floor.



Elements of structure:
a column, beam or other
member forming part of a
structural frame



27 Containment – Compartmentation

Evaluate the maximum compartment size within the assessment area.

Unacceptable
Over 2000 square metres (over 3000 square metres in single storey buildings).

HTM 85 Standard:
900–2000 square metres (900–3000 square metres in single storey buildings).

High standard
Less than 900 square metres.

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is to "HTM 85 Standard" then it is satisfactory.

3. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following deficient precautions:
20 Means of escape – Refuge;
22 Means of escape – Height above ground level;
29 Containment – External envelope protection.

4. In preparing the assessment it is important to check that the boundaries of the assessment area are either compartment or sub-compartment walls. If the building is not divided by compartment walls, but only by sub-compartment walls, then the area to be considered is that of the two largest adjacent sub-compartments.

5. To maintain the integrity of compartmentation, openings should be adequately fire-stopped and limited to:

a. doors which have a period of fire resistance not less than that of the compartment structure;

b. openings for cast iron or steel pipes of not more than 160 mm diameter, or for pipes of other materials – not more than 40 mm diameter, or for pipes with a proprietary seal which has been shown by test to maintain the fire resistance of the compartment structure – any diameter;

c. ventilation ducts which comply with the requirements of BS5588:Part 9;

d. refuse and laundry chutes of non-combustible construction which are accessed through fire-resisting doors; and

e. protected shafts.

Continued on next page

27 Containment – Compartmentation

Continued from previous page

6. Openings in compartment floors for stairways, lifts, escalators, and pipes and ducts not complying with the previous paragraph, should be enclosed in a protected shaft which has the same period of fire resistance (integrity, insulation and, where applicable, load-bearing capacity) as the compartment floor.

7. The protected shaft should form a complete barrier to fire between different compartments which the shaft connects.

8. Access to a protected shaft from a circulation space should be through doors and doorsets, which provide a period of fire resistance of at least 60 minutes.

9. Access to a protected shaft from a room should be through a lobby. The combined fire resistance of the two sets of doors or doorsets to the lobby, should be at least 60 minutes.

10. Means for ventilating protected shafts in the event of fire should be provided as follows:

a. for a protected shaft containing a stairway – at the top of the stairway, an openable window, or similar, providing an area of 1 m^2;
b. for a protected shaft containing a lift or lifts, a permanent opening of 0.1 m^2 for each lift.

11. Lift motor rooms should be enclosed in 30 minute fire- resisting construction.

Survey
Check for the integrity of compartment/ sub-compartments

Desktop
Inspect building plans

28 Containment – Sub-division of Roof and Ceiling Voids

Evaluate the assessment area to establish if any roof or ceiling voids which exist are sub-divided so as to achieve the standard set down in HTM 85.

HTM 85 Standard:
30 minute fire-resisting barriers provided to sub-divide any concealed roof or ceiling void, so that the distance between barriers does not exceed 20 metres.

Notes:

1. It is not possible to accept or compensate for a lower standard.

2. Should a higher standard be provided this cannot be used as a compensatory factor for either higher levels of risk/hazard or deficiencies in other precautions.

3. Openings should be limited to those for;

a. doors which have at least 30 minutes fire resistance;

b. pipes (see Worksheet 27: Compartmentation)

Survey
Check for the sub-division of any roof or ceiling voids

Desktop
Inspect building plans

29 Containment – External Envelope Protection

Evaluate the protection offered by the external envelope of the building, under the following three aspects:

a. Junction of walls and low-level roofs
Where a roof abuts an external wall the roof provides a period of fire resistance of at least 60 minutes for a distance of three metres from the wall. See Diagram 7.

b. Junction of compartment walls and external walls.
When a compartment (or sub-compartment) wall meets an external wall, there is a one metre wide storey height strip of external wall, which has a period of fire resistance at least equal to that of the compartment (or sub-compartment) wall, to prevent fire spread between compartments (or sub-compartments). See Diagram 8.

c. Unprotected area
The maximum percentage of unprotected area in an external wall should be determined from the graph in Diagram 9 for the three categories; unacceptable, inadequate, and HTM 85 Standard.

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is "inadequate", then it will either be necessary to improve the provision or compensate through higher standards of precautions drawn from the following list:
27 Containment – Compartmentation;
33 Extinguishment – Sprinklers.

3. If the precaution is to "HTM 85 Standard" then it is satisfactory.

4. The external wall or roof should provide sufficient fire resistance to prevent external fire spread from adjacent buildings or parts of the same building in different compartments. The importance of external envelope protection for existing buildings depends on the proximity of adjacent buildings, or compartments within the same building. In an isolated building surrounded by parkland, for example, the external envelope protection may not be important. However, where the building is surrounded by similar buildings on a compact urban site, the external envelope protection becomes important.

5. Other methods of determining space separation are described in a Building Research Establishment Report 'External fire spread: Building separation and boundary distances'.

Survey
External visual inspection

Desktop
Inspect building plans

Diagram 7 Fire resistance at junction of external walls and low level roofs

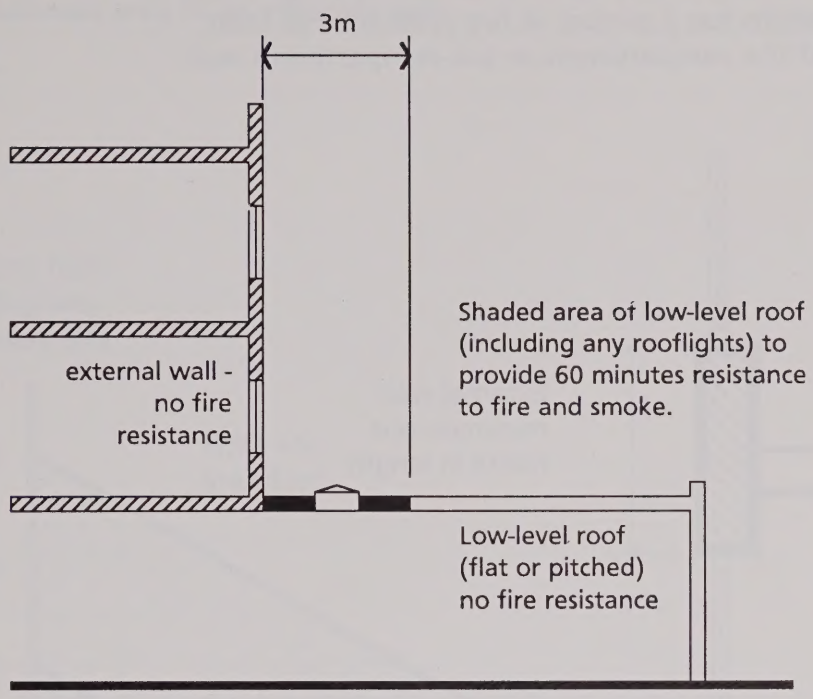
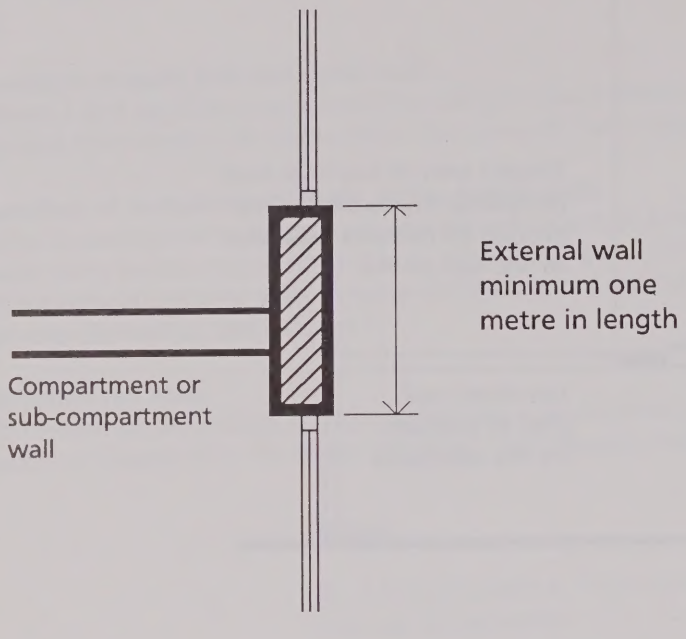


Diagram 8 Junctions of compartment walls and external walls

Hatched area indicates a one metre wide storey height strip of external wall, which has a period of fire resistance at least equal to that of the compartment or sub-compartment wall.



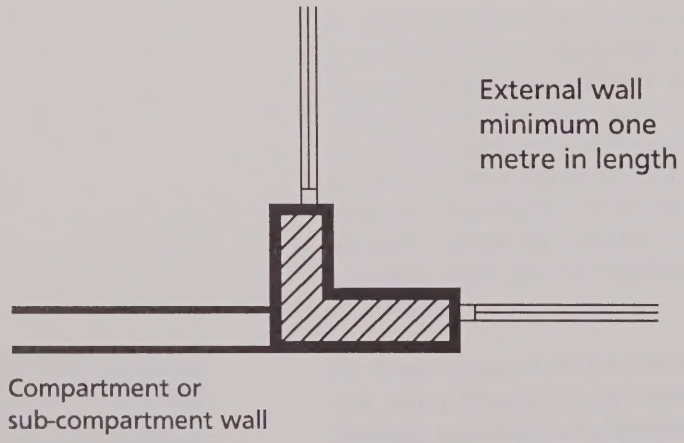
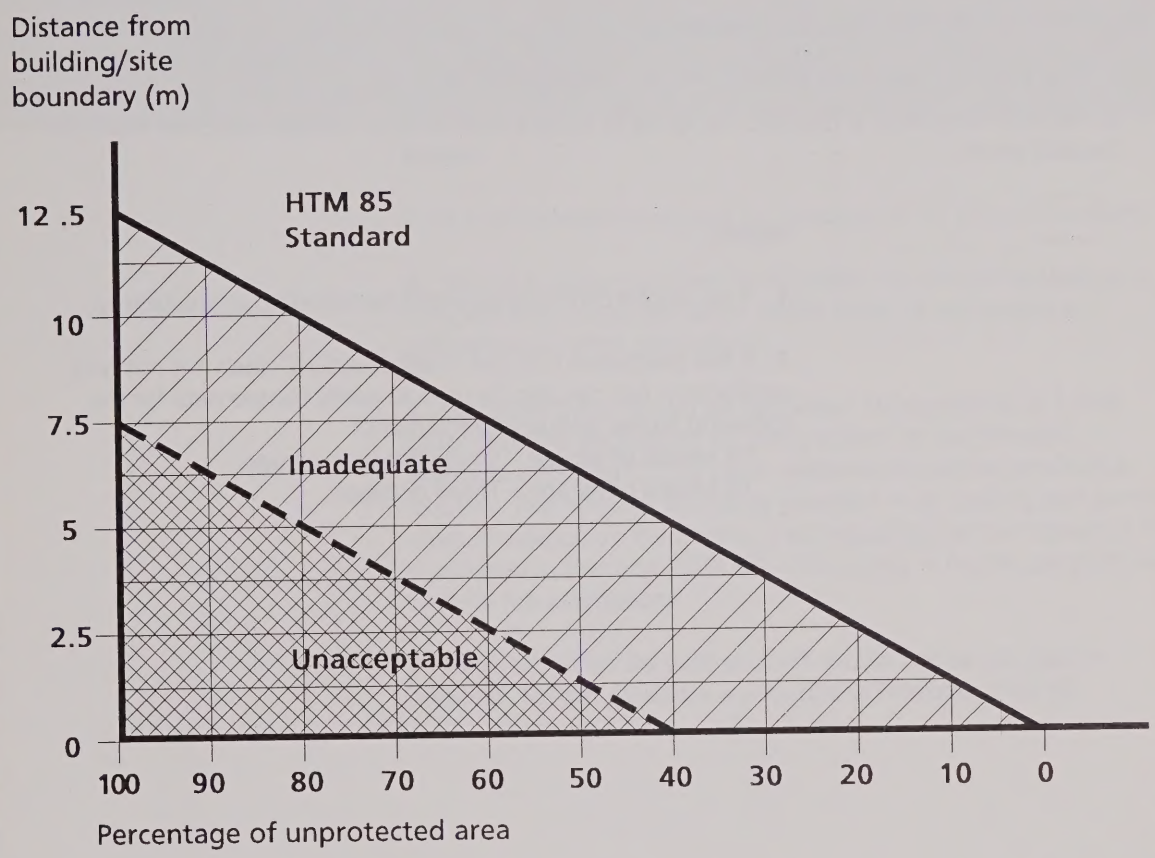


Diagram 9 Unprotected area

Method to determine the amount of unprotected area in an external wall.



30 Containment – Smoke Control

The HTM 85 Standard does not require the installation of any form of mechanical smoke control, however the provision of one of the following would constitute a "high standard":

High standard
One of the following:

a. a full smoke control and extract system; or

b. pressurised stairways in accordance with BS5588 (Part 4); or

c. in Nucleus hospitals and hospitals designed to comply with HTM 81 smoke extraction from the hospital street.

Notes:

1. If no smoke control is provided the standard is satisfactory.

2. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher deficient precautions:
18 Means of escape – Single direction escape;
19 Means of escape – Travel distance.

Survey
Visual check

Desktop
Inspect building plans

31 Extinguishment – Manual Fire Fighting Equipment

Evaluate the assessment area to establish if the provision of first aid fire-fighting equipment installed for the use of the occupants and the fire brigade achieves the standard set down in HTM 85.

HTM 85 Standard:
Hand-held extinguishers, fire blankets and hose reels are provided as necessary. Portable extinguishers comply with BS5423 and are inspected and maintained in accordance with BS5306:Part 3. Hose reel installations conform to the relevant section of BS5306:Part 1.

Notes:

1. It is not possible to accept or compensate for a lower standard.

2. Should a higher standard be provided this cannot be used as a compensatory factor for either higher levels of risk/hazard or deficiencies in other precautions.

3. Generally there should be two water extinguishers, of 9 litre capacity or the equivalent, for every 400 m^2 or part thereof. Extinguishers using CO_2 or other mediums should be provided as required. Fire blankets should be provided in all cooking and pantry areas. Guidance on the means of extinguishing various classes of fire is provided in Firecode: HTM 83 – 'Fire safety in healthcare premises: General fire precautions'.

4. New halon first aid extinguishers should not be provided in hospitals. Further guidance is provided in Firecode: HTM 83.

Survey
Type and number of extinguishers

32 Extinguishment – Access and Facilities for the Fire Brigade

Evaluate the access and facilities provided for the fire brigade in responding to a fire in the assessment area.

Unacceptable
Provision which falls below the HTM 85 Standard.

HTM 85 Standard:

a. *Adequate site access provided for fire-fighting appliances, which may need to attend in significant numbers. Points of access having been agreed with the local fire authority.*

b. *Access for brigade appliances to within 45 metres of 25 per cent of the building perimeter.*

c. *Access points into the building for fire-fighting personnel are provided at suitable locations around the building.*

d. *At least one staircase suitable for use by fire-fighting personnel which can be entered at ground level from a suitable access for brigade appliances.*

High standard
Provision in accordance with HTM 81.

Notes:

1. If the precaution is "unacceptable", then it will be necessary to improve the provision.

2. If the precaution is to "HTM 85 Standard" then it is satisfactory.

3. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following deficient precaution:
22 Means of escape – Height above ground level.

4. Hospital roads used by fire-fighting appliances should be kept clear of obstructions at all times. If parking is allowed, sufficient safe clearance should be provided and maintained to allow fire-fighting appliances clear passage at all times. Fire brigade access should be indicated on site plans and any associated mimic displays.

Survey
Visual check

Desktop
Inspect building plans

33 Extinguishment – Sprinklers

The HTM 85 Standard does not require the installation of any form of auto-suppression, such as a water sprinkler system, however the provision of auto-suppression throughout the assessment area would constitute a "high standard".

High standard
The provision of some form of auto-suppression, such as a water sprinkler system.

Notes:

1. If no sprinkler system is provided the standard is satisfactory.

2. If the precaution is to the "high standard" then it is not only satisfactory, but can also be used to partly compensate for the following higher levels of risk/hazard or deficient precautions:
   1 Patients;
   6 Ignition sources – Fire hazard rooms;
   16 Communications – Observation;
   17 Communications – Alarm and detection systems;
   26 Containment – Elements of structure;
   29 Containment – External envelope protection.

Survey
Visual check

Desktop
Inspect building plans

Survey sheets

Survey Sheet: For use in patient access areas which include sleeping accommodation

Hospital		:
Assessment area		:
Floor level – Worksheet 22		:
Consider the people		
Number of patients –	Worksheets 1 & 3	:
Type of patients –	Worksheets 1 & 3	:
Number of beds visible –	Worksheet 16	:
Staffing levels –	Worksheet 24	:
Consider the building		
Compartment structure –	Worksheets 20 & 27	:
Ceiling and roof voids –	Worksheet 28	:
Fire hazard rooms –	Worksheet 6	:
Surface finishes –	Worksheet 10	:
Consider the escape routes		
Single direction escape –	Worksheet 18	:
Total travel distance –	Worksheet 19	:
Stairways –	Worksheet 21	:
Check the provision of:		
Alarm and detection –	Worksheet 17	:
Textiles and furniture –	Worksheet 11	:
Combustible materials –	Worksheet 12	:
Escape lighting –	Worksheet 23	:
Fire extinguishers etc –	Worksheet 31	:
Signs and fire notices –	Worksheet 15	:
Verify management policies on		
Smoking –	Worksheet 2	:
Arson –Worksheet 4		:
Work processes –	Worksheet 5	:
Equipment –	Worksheet 7	:
Consider the outside		
Fire brigade access etc –	Worksheet 32	:
External inspection –	Worksheets 8 & 29	:
Any extra compensatory precautions?		
Escape bed lifts –	Worksheet 25	:
Smoke control –	Worksheet 30	:
Sprinklers –	Worksheet 33	:

Any other comments

Date: **Assessors:**

Survey Sheet: For use in patient access areas which do not include sleeping accommodation

Hospital:
Assessment area:

Floor level –	Worksheet 22	:

Consider the people

Number of patients –	Worksheets 1 & 3	:
Type of patients –	Worksheets 1 & 3	:
Staffing levels –	Worksheet 24	:

Consider the building

Compartment structure –	Worksheets 20 & 27	:
Ceiling and roof voids –	Worksheet 28	:
Fire hazard rooms –	Worksheet 6	:
Surface finishes –	Worksheet 10	:

Consider the escape routes

Single direction escape –	Worksheet 18	:
Total travel distance –	Worksheet 19	:
Stairways –	Worksheet 21	:

Check the provision of:

Alarm and detection –	Worksheet 17	:
Textiles and furniture –	Worksheet 11	:
Combustible materials –	Worksheet 12	:
Escape lighting –	Worksheet 23	:
Fire extinguishers etc –	Worksheet 31	:
Signs and fire notices –	Worksheet 15	:

Verify management policies on

Smoking –	Worksheet 2	:
Arson –Worksheet 4	:	
Work processes –	Worksheet 5	:
Equipment –	Worksheet 7	:

Consider the outside

Fire brigade access etc –	Worksheet 32	:
External inspection –	Worksheets 8 & 29	:

Any extra compensatory precautions?

Smoke control –	Worksheet 30	:
Sprinklers –	Worksheet 33	:

Any other comments

Date: **Assessors:**

Other publications in this series

(Given below are details of all Health Technical Memoranda available from HMSO. HTMs marked (*) are currently being revised, those marked (†) are out of print. Some HTMs in preparation at the time of publication of this HTM are also listed.)

1 Anti-static precautions: rubber, plastics and fabrics*†
2 Anti-static precautions: flooring in anaesthetising areas (and data processing rooms)*, 1977.
3 –
4 –
5 Steam boiler plant instrumentation †
6 Protection of condensate systems: filming amines †
2007 Electrical services: supply and distribution, 1993.
8 –
9 –
2010 Sterilizers, 1994.
2011 Emergency electrical services, 1993.
12 –
13 –
2014 Abatement of electrical interference, 1993.
2015 Bedhead services, 1994.
16 –
17 Health building engineering installations: commissioning and associated activities, 1978.
18 Facsimile telegraphy: possible applications in DGHs †
19 Facsimile telegraphy: the transmission of pathology reports within a hospital – a case study †
2020 Electrical safety code for low voltage systems, 1993.
2021 Electrical safety code for high voltage systems, 1993.
2022 Medical gas pipeline systems, 1994.
23 Access and accommodation for engineering services †
24 –
2025 Ventilation in healthcare premises, 1994.
26 Commissioning of oil, gas and dual fired boilers: with notes on design, operation and maintenance †
27 Cold water supply storage and mains distribution* [Revised version will deal with water storage and distribution], 1978.
28 to 39 –
2040 The prevention of legionellae in healthcare premises – a code of practice, 1993.
41 to 49 –
2050 Risk management in the NHS estate, 1994.
51 to 54 –
2055 Telecommunications (telephone exchanges), 1994.

Component Data Base (HTMs 54 to 70)

54.1 User manual, 1993.
55 Windows, 1989.
56 Partitions, 1989.
57 Internal glazing, 1989.
58 Internal doorsets, 1989.
59 Ironmongery, 1989.
60 Ceilings, 1989.
61 Flooring, 1989.
62 Demountable storage systems, 1989.
63 Fitted storage systems, 1989.
64 Sanitaryassemblies, 1989.
65 Signs †
66 Cubicle curtain track, 1989.
67 Laboratoryfitting-out, 1993.
68 Ducts and panel assemblies, 1993.
69 Protection, 1993.
70 Fixings, 1993.
71 to 80 –

Firecode

81 Firecode: fire precautions in new hospitals, 1987.
81 Supp 1, 1993.
82 Firecode: alarm and detection systems, 1989.
83 Fire safety in healthcare premises: general fire precautions, 1994.
85 Firecode: fire precautions in existing hospitals, 1994.
87 Firecode: textiles and furniture, 1993.
88 Fire safety in healthcare premises: guide to fire precautions in NHS housing in the community for mentally handicapped/ill people, 1986.

New HTMs in preparation

Lifts
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